IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Shvarts	**GROUP:**	2634
SERIAL NO:	09/325,099	**EXAMINER:**	Fan, Chieh M.
FILED:	06/03/1999		
FOR:	TRANSLATION LOOP MODULATOR		

Assistant Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

DECLARATION OF ROBERT J. BROUGHTON UNDER 37 C.F.R.§1.132

I Robert J. Broughton, hereby declare and state as follows.

1. I am currently employed by Analog Devices, Inc. as an Integrated Circuit (IC) Design Engineer.

2. I have been employed by Analog Devices, Inc. for more than ten years and have been an IC Design Engineer for the past six years.

3. I have a Bachelor of Science degree in Electrical Engineering (1984) from Western Virginia University and have taken several graduate level courses in electrical engineering.

4. I am familiar with the above referenced patent application, the cited prior art, and the final office action dated February 25, 2004 in connection with the above referenced patent application.

5. German Patent No. DE 197 43 207 (to Herzinger et al.) discloses a transmitter circuit in which a single frequency plan ($F_{LO} = F_{OUT} / (1 - n/r)$) is used for either GSM or DCS. (Herzinger et al. translation, page 3, second column, line 3). Herzinger et al. also discloses that the values of two frequency dividers FT1 and FT2 may be different or the same to provide a high degree of freedom in determining the frequency plan. (Herzinger et al. translation, page 5, first column, lines 8 - 12).

6. The Herzinger et al. reference does not disclose a dual band radio frequency transmitter system that provides a first frequency divider unit for providing a divide by m function and a second frequency divider unit for providing a divide by n function such that $F_{LO} = F_{OUT} / (1 + m/n)$ in a first mode of operation and $F_{LO} = F_{OUT} / (1 - m/n)$ in a second mode of operation.

7. U.S. Patent No. 6.208,875 (to Damgaard et al.) discloses a circuit that provides a dual band operation, in part, using a tunable VCO 71, one of two VCOs 57 or 59, one of two VCOs 111 or 113, and a filter 104 to remove the signal that is not being used. (Damgaard et al., col4, lines 47 - 60, col.5, lines 7 - 12, 49 - 50 and 60 - 62).

8. The transmitter circuit in the Damgaard et al. reference employs a different

frequency plan than that disclosed in the above referenced application.

9. The Damgaard et al. reference does not disclose a divide by m frequency divider unit and a divide by n frequency divider unit such that $F_{LO} = F_{OUT} / (1 + m/n)$ in a first mode of operation and $F_{LO} = F_{OUT} / (1 - m/n)$ in a second mode of operation.

10. The above frequency plan (of paragraph 9) employs a particular relationship between frequency dividers, and is not the same as tuning VCO 71, switching between VCOs (57 or 59) and (111 or 113) and applying the filter 104 as disclosed in the Damgaard et al. reference.

11. The difference between the frequency plan of the circuit disclosed in the above referenced application and that disclosed in the Damgaard et al. reference is significant because the Damgaard et al. circuit discloses using either multiple switchable VCOs or tunable VCOs, while applicant's circuit permits only two fixed VCOs to be employed.

12. The circuit of Damgaard requires that frequencies of both the local oscillator (LO) and the intermediate frequency (IF) be changed when switching between GSM and DCS. The circuit disclosed in the above referenced application includes no IF VCO and does not require changing the LO VCO frequency.

13. There is no language in either the Herzinger et al. reference or the Damgaard et al. reference that provides any motivation to combine the teachings of these patents to arrive at the

subject matter of the above referenced application, and any combination of the two references would not result in a system that employs the frequency plan that is disclosed in the above referenced application.

14. The output of the bandpass filter 104 in Damgaard et al. is not switched by the filter 104, but rather by the switching network that precedes the filter 104, and this switching network includes multiple switchable VCOs 111, 113 (or a tunable VCO) and a combiner or switch (also labeled 113 in Figure 3 of Damgaard et al.).

15. The filter 104 is a bandpass filter, not a switch, and substituting the bandpass filter 104 of Damgaard et al. for the filter TP in Herzinger et al. would not achieve a dual band system as disclosed in the above referenced application. The frequency plan in the circuit of Herzinger et al. does not rely on the characteristics of the filter TP.

16. The frequency plan of Herzinger et al. is not compatible with the frequency plan of Damgaard et al. since Damgaard et al. requires changing both the LO and IF frequencies as well as their relationship, while Herzinger et al. requires that the relationship between the LO and IF frequencies be fixed.

17. There is no clear way in which the teachings of the Herzinger et al. and Damgaard et al. references may be combined.

Signed under penalties of perjury.

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Date: May 24, 2004

Robert J. Broughton

Robert J. Broughton
382 Lane Road
Chester, New Hampshire